Check List the journal of biodiversity data

NOTES ON GEOGRAPHIC DISTRIBUTION

Check List 12(2): 1864, 28 March 2016 doi: http://dx.doi.org/10.15560/12.2.1864
ISSN 1809-127X © 2016 Check List and Authors

Polygala irregularis Boiss.: a new record to the flora of Malwa region, Madhya Pradesh, India

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Abstract: *Polygala irregularis* Boiss. (Polygalaceae) was collected for the first time from the Malwa region, Madhya Pradesh, India.

Key words: new record; Polygalaceae

The genus *Polygala* L. (family Polygalaceae) is nearly cosmopolitan in distribution, excluding New Zealand, Polynesia and the arctic zone. Worldwide there are 600 species (Mukherjee 1993), and in India, 27 species. From the Indian state of Madhya Pradesh, 16 species of *Polygala* have been reported (Mukherjee, 1993; Khanna et al. 2001), including 13 species by Mukherjee (1993), three additional species by Khanna et al. (2001). *Polygala irregularis* Boiss. is not among those species previously reported from Madnya Pradesh. During extensive field surveys of the angiosperm flora of the Malwa region, India, the first record of *P. irregularis* was found, which brings the number of *Polygala* spp. in Madhya Pradesh to 17. A description and photographs of *P. irregularis* are provided here.

Botanical explorations were made from 2008 to 2013 in the Malwa region of state of Madhya Pradesh, India. Geographically, the Malwa region is situated on a plateau in western Madhya Pradesh.

The literature was surveyed (Dar 1973; Parmar 1987; Meijden 1988; Benerjee 1993), a critical examination was made of the Botanical Survey of India and Central National Herbarium Howrah, and the expert opinion of P. Venu and Dr. S. L. Meena (Botanical Survey of India) was sought to confirm the identification. Specimens were deposited in the BSI (Botanical Survey of India) and the MLVGCB (Department of Botany, Manikya Lal Verma Government College) herbaria.

Polygala irregularis Boiss., Diagn. Pl. Or. Nov. ser. 1. 1: 8 1843 (Boissier 1843). Mukherjee (1958): 42; Raizada (1976); Parmar *in* Shetty and Singh (1987): 96–97; Banerjee *in* Sharma and Balakrishnan (1993): 472; Meena (2014d). (Figure 1)

Annual, pubescent, 10–35 cm high, herb. Lower leaves obovate; upper leaves shortly petioled, 2–3.5 × 0.3–0.6 cm, linear-oblong, lanceolate, attenuate at base, retuse, obtuse, mucronate at apex, margins recurved, puberulous on both surfaces, coriaceous. Flowers in terminal and lateral racemes, purplish. Bracts deciduous. Sepals persistent, hairy; outer sepals linear-oblong

Figure 1. *Polygala irregularis* Boiss. from Hakrana village, Neemuch, Madhya Pradesh, India; *Meena,* M-249; Janjarwara village, *P. Venu* (BSI) 7528 (MLVGCB Herbarium). **A:** habit. **B:** flower. **C:** fruit. **D:**seed.

to ovate, unequal, broadly hyaline margined; inner calyx obovate, oblique, sparsely hairy above. Petals: middle lobes with crested keel; lateral lobes obovate, cuneate at base, truncate, margins undulate, ciliate at base. Staminal sheath 1.5–2 mm long. Ovary orbicular, glabrous; stigma hooded, concave. Capsule obliquely obovate or orbicular, emarginate, winged, 3–4 mm in diameter, margins hairy. Seeds obovoid, conical, acute at apex, sericeous, crowned with bulbous hairs; caruncle lateral, 2-lobed, inconspicuous, cuneiform, pendent.

Material examined: India: Madhya Pradesh. Neemuch: Hakrana village; *Meena,* M-249. Janjarwara village, *P. Venu* (BSI) 7528 (MLVGCB Herb).

Based on the review of the literature, *P. irregularis* was previously unrecorded from the Malwa region of Madnya Pradesh, India (Agarkar 1969; Saxena 1970; Gupta and Ram Lal 1973; Oomachan 1977; Varma and Das 1982; Datta and Dixit 1985; Roy and Dixit 1987; Mukherjee 1993; Samvatsar 1996; Khanna et al. 2001; Meena 2013a, 2013b, 2014a, 2014b, 2014c). This species occurs in Arabia, Iran and Pakistan, and India, where it was previously only known from the states of Jammu and Kashmir, Punjab, Haryana, Uttar Pradesh, Rajasthan, Gujarat and Maharashtra (Banergee 1993) (Figure 2). The new record is approximately 600 km from the closest previously known record in Rajasthan state (Parmar 1987).

Polygala irregularis is a rare species, flowering and fruiting from August to November, and the new records from Malawa region were found in gravelly waste lands and open forests.

Found during extensive botanical explorations in the Malwa region of Madhya Pradesh, the new records of *Polygala irregularis* are the first for this rare species from the state and fill a gap in the known range of this species in India.

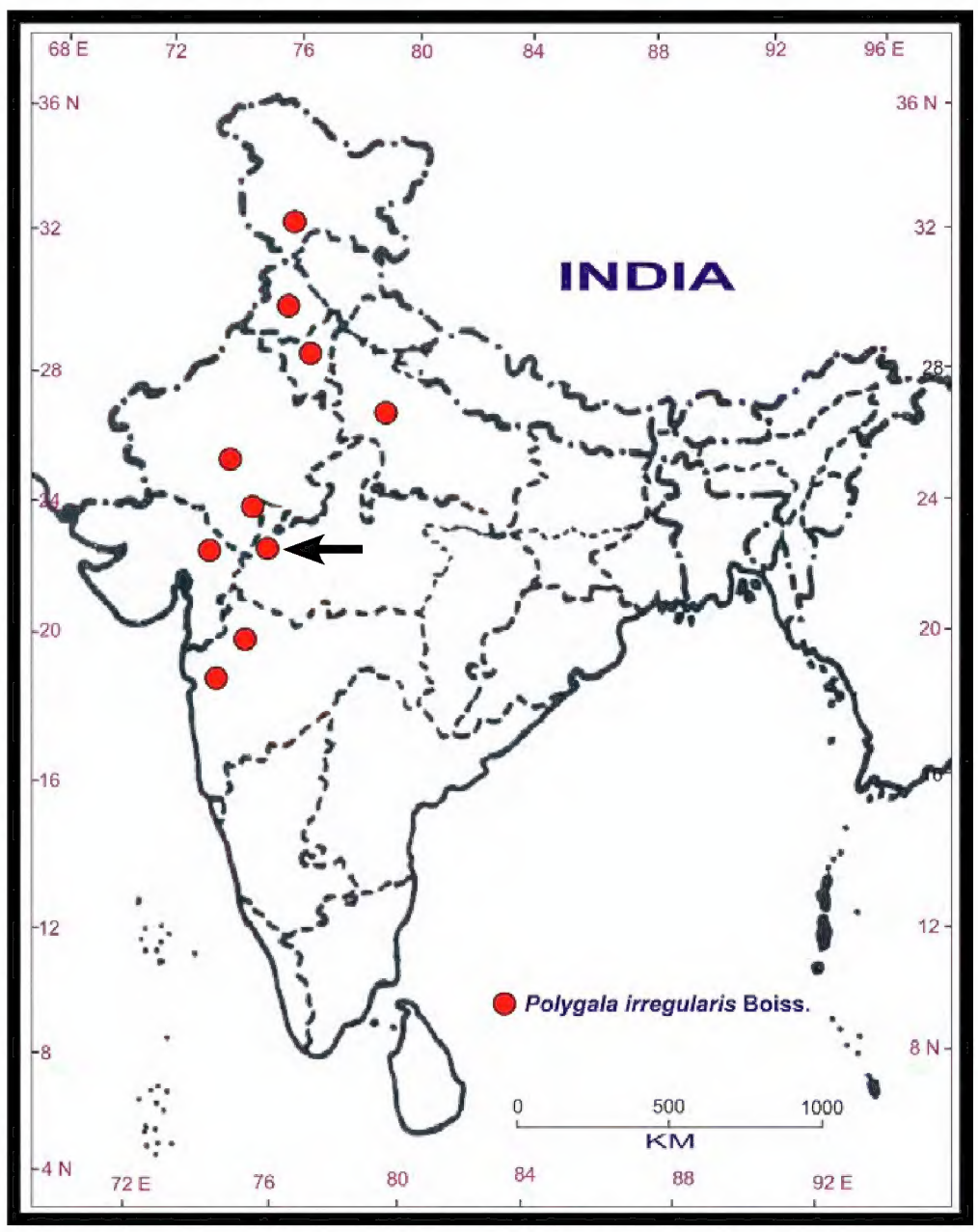

Figure 2. Distribution of *Polygala irregularis* Boiss. in India. Arrow points to new record.

ACKNOWLEDGEMENTS

The author is grateful to Dr. P. Venu (Botanical Survey of India, Howrah) for confirming the identity of specimens. I also thank Dr. V. Singh (Botanical Survey of India, Arid Zone Regional Centre, Jodhpur) for valuable suggestions for this study. Thanks are also due to Dr. S. L. Meena (Botanical Survey of India, Jodhpur) and Dr. B. L. Yadav (Department of Botany, Manikya Lal Verma Government. College, Bhilwara) for their encouragement, as well to the Principal, Manikya Lal Verma Government College for providing the facilities. Financial assistance was provided by University Grants Commission, New Delhi and is gratefully acknowledged.

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Received: 19 August 2014
Accepted: 24 March 2016
Academic editor: Jamilah Mohd Salim, Robert G. Forsyth